

were found in the surrounding areas. It is possible that the insects are attracted by the sweet strong fragrance of the flowers of *C. coriaria* to feed on the honey produced by them.

Wynter-Blyth (1957) in his book BUTTERFLIES OF THE INDIAN REGION (p. 42) has reported that butterflies are attracted to the trees of *Buddleia* in the Himalayas and *Poinsettia* and *Moringa* at lower elevations. The present report is probably such a phenomenon.

COIMBATORE,
January 20, 1970.

M. MOHANASUNDARAM
C. V. SIVAKUMAR

21. OBSERVATIONS ON THE MATING BEHAVIOUR IN THE ANT *MONOMORIUM GRACILLIMUM* SMITH (HYMENOPTERA: FORMICIDAE)

Monomorium gracillimum Smith is a small dark brownish-red ant, about 2 mm. in length and is a very common household pest, nesting in the ground or floor and in the crevices of walls. On June 16, 1968, at about 5 p.m. when the weather was cloudy and slightly rainy, the authors found large numbers of workers and alate males and females of *Monomorium gracillimum* just outside the opening of the nest in the ground floor of the Malabar Christian College building. Evidently, the colony was going through the process of swarming. Some workers and winged reproductives were collected in a tube and were transferred into an artificial nest in the laboratory, for observation. The ants were fed with honey and dead houseflies. The next morning, the winged males and females were observed mating. Within the artificial nest, the alate forms showed no tendency to fly. The mating behaviour under conditions of captivity which could easily be observed through the transparent top-cover of the nest, is as follows:

An alate male (4 mm.) is much smaller than an alate female (7.5 mm.). The alate male approaches the female from behind and strokes the tip of its gaster with its antennae and front pair of legs. The female starts walking about and is closely followed by the male in tandem fashion. The male then grasps and holds firmly the posterior half of the gaster of the female, with its three pairs of legs. The thoracic part of the male now comes to lie on the dorsal side of the gaster of the female. The gaster of the male is then bent downwards almost at right angles, at the pedicel, to the longi-

tudinal axis of its body and the *ædeagus* is in turn directed at right angles to the position of the gaster, almost horizontally and inserted into the vagina of the female. During copulation, the anterior half of the gaster of the female is stroked by the antennae of the male. Other alate males also try to climb over the copulating male to have access to the female but they slip and drop down. The female mostly keeps walking about slowly, carrying the copulating male on the dorsal side of its gaster. The male and the female separate after about fifteen minutes.

DEPARTMENT OF ZOOLOGY,
MALABAR CHRISTIAN COLLEGE,
CALICUT-1,
June 21, 1968.

A. B. SOANS
J. S. SOANS

22. VARIOUS ASSOCIATES OF SESSILE BARNACLES IN BOMBAY WATERS

INTRODUCTION

Numerous instances of associations ranging from simple commensalism to total parasitism and symbiosis are to be abundantly found in literature. Majority of these associations occur in the crowded littoral and sublittoral zones as there is often competition for space. Cirripedes, being a major sedentary component of the biota and occupying a great deal of area, contribute towards such relationships to a great extent. These relationships, it is reported, range from sea-weeds to whales, numbering about 2000 species of living organisms. In this account an attempt has been made to compile the list of organisms that were found associated with the balanomorphs found around Bombay.

MATERIAL AND METHODS

Collections of sessile barnacles were made at random and brought to the laboratory. The associates from the shells were removed carefully, narcotised, if necessary, so as to obtain them in fully extended state and then preserved.